

What is claimed:

1. A medical device shaft for connection with a handle and for insertion within a body, comprising: an elongated, deflectable shaft having a proximal shaft portion, an intermediate shaft portion, and a distal shaft portion, the elongated, deflectable shaft having a transition in stiffness from the proximal shaft portion to the distal shaft portion.
2. The medical device shaft of claim 1, wherein the shaft decreases in stiffness from the proximal shaft portion to the distal shaft portion.
3. The medical device shaft of claim 1, wherein the elongated, deflectable shaft includes a longitudinal axis and a plurality of slits that extend perpendicular to the longitudinal axis of the deflectable shaft.
4. The medical device shaft of claim 3, wherein the shaft includes a greater number of slits near the distal shaft portion than near the proximal shaft portion.
5. The medical device shaft of claim 3, wherein the number of slits per unit length is greater near the distal shaft portion than near the proximal shaft portion.
6. The medical device shaft of claim 3, wherein the slits on the shaft have a depth and slits on the shaft near the distal shaft portion are deeper than the slits on the shaft near the proximal shaft portion.

7. The medical device shaft of claim 6, wherein the depth of the slits increases gradually increases from a point on the shaft near the proximal shaft portion to a point on the shaft near the distal shaft portion.

8. The medical device shaft of claim 3, wherein the distal shaft portion does not include slits.

9. The medical device of claim 3, wherein at least one of the number of slits, the location of slits, the frequency of slits, the orientation of the slits, the size of the slits, and the depth of the slits are varied to vary the transition of stiffness in the shaft.

10. The medical device shaft of claim 1, wherein the distal shaft portion includes an interior ribbon braid that provides torqueability, bendability, and prevents the distal shaft portion from collapsing.

11. The medical device shaft of claim 10, wherein the ribbon braid is embedded in a layer of hydrophobic polymer.

12. The medical device shaft of claim 11, further including a hydrophilic polymer layer over the hydrophobic polymer layer.

13. The medical device shaft of claim 11, wherein the ribbon braid includes counter-wound double wires made from a metal alloy.
14. The medical device shaft of claim 13, wherein the metal alloy is Nitinol.
15. The medical device shaft of claim 1, wherein the deflectable shaft includes a high torsion, bendable tubing.
16. The medical device shaft of claim 15, wherein the tubing is Nitinol tubing.
17. The medical device shaft of claim 15, further including a hydrophobic polymer layer on the Nitinol tubing.
18. The medical device shaft of claim 17, further including a hydrophilic polymer layer on the hydrophobic polymer layer.